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ABSTRACT

This report presents the statistical results of agricultural demonstrations for two crops--cotton and sorghum--in Hockley County, Texas. Demonstration results are geared to increase the knowledge and understanding of possible solutions to the many problems that are impediments in reaching long-range goals established by the County's Program Building Committee. The current objectives are to reduce production cost per pound of lint and grain and improve product quality for increased profits. It is felt that production cost can be reduced by the following four principles: (1) reduce expenditures while maintaining yields, (2) take small yield reductions for greater decrease in expenses, (3) increase yields from the same expenditures, and (4) increase expenditures for a proportionately large return in yields. It is noted that in interpreting demonstration results, it is necessary to look for principles of fitting production practices together rather than adhering to the use of any one practice. Cotton demonstration results indicated the harvesting of only about one-half of a crop due to the weather, the harvest rush, and yields too low to gin plots separately. (Author/JS)

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D-801

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SPD

SPD HOCKLEY COUNTY

Results of *1971*

AGRICULTURAL DEMONSTRATIONS

SPONSORED BY COUNTY
PROGRAM BUILDING COMMITTEE

TEXAS AGRICULTURAL EXTENSION SERVICE

BILL TAYLOR
County Agent

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AC 012 789

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DEDICATION

This book is dedicated to Martin J. Cuba, who assisted with this program for 15 years in order that more and better result demonstrations might be conducted. He believed in the result demonstrations as the most effective tool to evaluate agricultural practices and increase their value and use. During this period, his efforts have helped compile and spread a great amount of valuable knowledge.

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FOREWARD

Result demonstrations are geared to increase our knowledge and understanding of possible sulutions to the many problems which stand in the way of reaching long range goals established by the County Program Building Committee. The long range objectives presently receiving emphasis are reducing production cost per pound of lint and grain, and improving quality of products we produce for increased profits.

Production cost can be reduced by 4 principles which are easier said than done:

1. Reduce expenditures while maintaining yields.
2. Taking small yield reductions for greater decrease in expenses.
3. Increase yields from the same expenditures.
4. Increase expenditures for a proportionately large return in yields.

Applying Principle No. 1:

We can reduce expenses $10 per acre while maintaining 500# lint yield and have a 2¢ per pound reduction of production cost of cotton.

Apply Principle No. 4:

We may can spend $10 per acre to obtain $30 worth of lint and reduce production cost by 4¢ per pound on a 500# lint yield.

The key to success in applying these principles lie in the knowledge and management ability of the producer. This report of demonstration results is dedicated to this end.

In interpreting results of demonstrations we have to look for principles of fitting production practices together rather than a cut and dried answer on the use of any one practice. The practices affect one another and this is the reason a farmer can't just adopt a practice and always expect results.

ACKNOWLEDGMENT

This report gives a summary of result demonstrations planned with the Hockley County Program Building Committee and Sub-Committees and conducted by cooperating farmers. We wish to acknowledge the help of these committees in defining problems needing work and priority. The real credit goes to farmers who conducted the demonstrations and put forth extra effort in establishing plots and keeping results that others may benefit by them. Seed breeders, manufacturers, and retailers furnished supplies for some demonstrations. Local agricultural businesses helped in many ways with the demonstrations. Ginners and elevator operators contributed a great deal of effort in helping keep plots separated in processing.

MATERIAL INCLUDED IN THIS REPORT

All figures in this report are on a per acre basis. Although some yields were obtained from two sets of plots there is still some chance for yield differences, due to irrigation, land variation, and other factors. For this reason, data should not be interpreted too closely.

1971 WEATHER SUMMARY

The 1971 season was the third year in a row of seasons which did not give conditions for even average production. The 1971 season was one of the worst on record. You will note that the August maximum temperature average was about 10 degrees below normal. This didn't allow most blooms set after August 15 to mature. The dry spring caused poor set of the early blooms.

1971 WEATHER DATA

The following data is reported for Levelland in 1971, as observed by L. L. Dunlap and may help recall weather conditions in other areas.

DATE	RAINFALL	
Jan. 7	T	
13	T	
Total	None	
Feb. 8	.01	
22	.07	
Total	.08	
March 2	T	
3	.01	
Total	.01	
April 8	32°Freeze	
16	.48	
17	.02	
18	.09	
19	.40	
Total	.99	
May 3	T	
9	T	
27	.10	
29	.10	
30	.49	
Total	.69	
June 6	.58	some hail
12	.18	
13	.10	
15	.34	
20	1.39	
Total	2.59	

DATE	RAINFALL
July 2	.22
21	.11
23	.20
24	.12
26	.03
27	.05
28	.14
30	.18
31	.20
Total	1.25
Aug. 1	.17
4	.05
8	.18
9	.09
10	.59
12	.75
13	.39
14	.40
15	.04
16	.95
17	.94
18	.24
23	.60
24	.41
Total	5.80
Sept. 3	.08
9	.12
17	.92
18	.29
19	.06
20	.03
23	.72
24	2.67
25	.50
26	.01
Total	5.40

DATE	RAINFALL	
Oct. 18	.46	
20	.34	
21	.02	
26	.48	
27	.20	
29	.05	
Total	1.55	
Nov. 1	.02	
2	32°Freeze	
17	.26	
19	22°Freeze	
22	.03	
24	T	
28	.01	
Total	.32	
Dec. 1	.12	(.5" snow)
2	.61	(4.5" snow)
5	.36	(5" snow)
6	.02	
8	.01	
9	.02	
10	T	
15	.05	
29	.02	
Total	1.21	

TOTAL 1971
MOISTURE 19.89

Following are average monthly temperatures and rainfall for Levelland. Maximum and minimum temperatures are averages.

	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	ANNUAL
1960 Rainfall	.47	4.19	6	11.56	.77	.53	4.88	29.8
Avg. Temp.	63.1	76.1	80.3	82.3	79.0	71.8	61.5	
1961 Rainfall	.43	1.52	.355	5.52	.76	1.61	1.01	22.42
Avg. Temp.	61.6	72.1	76.4	76.0	75.7	70.3	61.2	
1962 Rainfall	.97	.88	1.73	7.3	2.37	2.56	4.67	22.31
Avg. Temp.	61.2	74.1	73.8	79	78.2	70.8	64.6	
1963 Rainfall	1.13	3.10	3.60	2.58	2.46	.38	.41	16.68
Avg. Temp.	64.1	72.0	75.6	79.6	77.7	71.6	64.3	
1964 Rainfall	0	2.0	2.41	.39	.61	3.08	.16	10.89
Monthly Min.	40.5	55.1	59.6	64.9	63.6	57.2	43.5	
Average Max.	79.0	86.3	91.8	98.5	92.9	81.3	77.0	
Temp. Avg.	59.7	70.7	75.7	81.7	78.3	69.2	60.3	
1965 Rainfall	.24	2.73	3.43	1.31	2.35	1.92	.64	13.63
Monthly Min.	44.8	54.4	62	63.6	16.5	54.5	42.1	
Average Max.	78.5	83.3	89.2	93.4	90.6	85.1	77.0	
Temp. Avg.	61.7	68.9	75.6	78.5	76.1	69.8	59.6	
1966 Rainfall	2.3	.65	2.36	.03	8.09	2.41		16.34
Monthly Min.	41.8	51.2	62.0	65.9	62.2	56.9	38.9	
Average Max.	73.1	80.9	88.7	95.2	85.7	81.2	74.2	
Temp. Avg.	57.5	66.1	75.4	80.6	74.0	69.1	65.6	
1967 Rainfall	.38	.45	4.39	3.44	1.22	1.91	.05	14.17
Monthly Min.	47.9	47.1	61.0	62.9	59.2	54.8	41.3	
Average Max.	79.0	83.6	89.1	89.3	89.5	81.0	78.1	
Temp. Avg.	63.5	65.4	75.1	76.1	74.4	67.9	59.7	
1968 Rainfall	.46	1.94	1.62	4.84	5.93	.20	.81	22.5
Monthly Min.	40.5	50.1	58.8	62.6	62.1	50.3	44.6	
Average Max.	71.3	82.5	92.3	88.3	87.4	84.2	79.1	
Temp. Avg.	55.9	66.3	75.6	75.5	74.8	67.3	61.9	
1969 Rainfall	1.80	3.08	.67	1.21	3.06	7.06	6.17	26.49
Monthly Min.	45	52.1	58.5	65.4	64.1	57.7	43.9	
Average Max.	75.2	82.3	91.3	99.4	94.1	80.2	67.7	
Temp. Avg.	60.1	67.2	74.9	80.9	79.1	68.4	55.8	
1970 Rainfall	.61	1.94	1.76	.73	1.76	1.47	1.55	12.67
Monthly Min.	40.0	49.3	58.6	63.4	62.2	55.9	40.2	
Average Max.	73.9	85.7	89.4	94.1	92.6	82.6	71.3	
Temp. Avg.	57.0	67.5	74.0	78.8	77.4	69.3	55.8	
1971 Rainfall	.99	.69	2.59	1.25	5.80	5.40	1.55	19.89
Monthly Min.	41.4	49.5	62.2	62.2	60.5	55.2	46.2	
Average Max.	74.8	81.4	92.4	92.7	81.8	80.8	73.2	
Temp. Avg.	58.1	65.4	77.3	77.4	71.1	67.9	59.7	

SUMMARY OF COTTON DEMONSTRATIONS

Demonstration results were somewhat like this years cotton crop. We only harvested about one half of a crop. Many demonstrations were lost to the weather, harvest rush, and yields to low to gin plots seperate.

There are a number of sound principles which have become evident since 1956 when we began publishing demonstration results. These principles are stated on page 10 and 11 of the 1964 report as well as in previous years. We would suggest your reading and understanding them if you have not already done so. Also crop production guides will help.

The following summary statements are largely related to this year's cotton demonstrations. They do not give a complete summary, but just mention some of the high points.

ROW SPACING OF COTTON

Close row spacing of cotton offers possible reductions in production cost, and yield increases of 5% to 30%. This practice is in the evaluation stage by farmers. We need to learn which factors will keep the yield increase nearer the 30% level. The 5% yield increase has been more common, as the first experiences with a new practice can cause mistakes that prevent or lower the yield increase. Trials on this practice should be limited to land relatively free of perennial weeds. Post emergence use of herbicides may also be required in some situations.

FERTILIZER RESPONSE

Fertilizer response was generally poor in 1971. The growing season so severely lowered yield potential that the fertility level of most fields was adequate for this yield level. Excessive straight nitrogen applications may have reduced yields by delaying maturity in some situations. We will need to make sure that phosphorus and nitrogen supplies in the soil are adequately balanced to get good response. Soil testing procedures are becoming more efficient and reliable each year and can be a good guide in determining needs.

IRRIGATION RESPONSE

Light irrigation applied about two weeks prebloom was profitable on early cotton varieties this year. The hot dry spring and short underground moisture were also factors which helped this practice. The cold wet August weather made irrigation in this period less profitable.

VARIETY DEMONSTRATIONS

Varieties with rapid boll development in short periods of time were an asset this year as in other short cold growing seasons. Some of the newer longer stapled early varieties have shown to have yield potential equal or greater than the older early varieties which are shorter staple. Varieties resistant to fields with disease and nematode problems are becoming more important. The principles that we have learned to use in fitting older varieties into given conditions can be applied to new varieties when we study and recognize the comparable characteristics of the new variety. Among these characteristics are growth habits, earliness, and the extent of their being determinate or indeterminate.

VERTICILLIUM WILT CONTROL

Verticillium Wilt was increased in fields by cool wet weather the last part of the summer. Resistant varieties and rotation with sorghum are a big help in reducing the affect of this disease. A demonstration on the Glen Butner farm shows the results of these two practices. Paymaster 909 has shown excellent wilt resistance, but on light wilt infestations, the earliness and stormproof qualities of moderately resistant varieties such as Tamcot 788 may be preferred.

NEMATODE CONTROL

Variety tolerance, sorghum rotation, irrigation, and cultural practices for rapid healthy seedling emergence, have been very effective in reducing nematode loss. Late planting dates and the dry spring, this year, kept the nematodes from getting the upper hand on most situations. These later planting dates, however, reduce yield potential and we may need to rely more on the other practices for nematode control.

USEFUL FACTORS IN INTERPRETATION OF RESULTS

All figures in these results are quoted on a per acre basis. Since quality didn't affect cotton price much this year, most plots are figured at 30¢ per pound. The quality is shown in some demonstrations for information and use when price spreads again develop on staple length and grade.

In calculating fertilizer cost most demonstrations used 5¢-10¢ and 5¢ per pound of N-P-K respectively.

In calculating cost and returns on cotton the seed value was considered to offset additional harvest and ginning cost created by the additional yield.

VARIETIES AND SORGHUM ROTATION FOR VERTICILLIUM WILT CONTROL

CONDUCTED BY: Glen Butner, 1 mile east of Arnett
PLANTING DATE: May 11 DATE OF IRRIGATIONS: Preplant, July 11 & August 12
FERTILIZER APPLIED: 60-60-0 SOIL TYPE: Level sandy clay loam

REMARKS: The feed land had grown feed for 2 years and showed very little wilt infestation. The adjoining cotton land had a heavy wilt infestation. This is one of the most interesting wilt control demonstrations we have had. The lowest value of the feed land increase indicates the higher degree of wilt resistance. The value of the variety resistance on cotton land also shows degrees of resistance. The varieties compared on feed land shows the adaptation of the varieties to the growing season and field situation when wilt infestation is not a major factor. All of the grades were LM spots. The feed land and cotton land had to be ginned together to make a bale and thus the same percent turnout had to be applied to seed cotton weights on feed and cotton land.

CROP GROWN IN 1970	VARIETY	LINT YIELD	LINT VALUE @ 30¢	VALUE OF FEED LAND INCREASE	VALUE OF VARIETY RESISTANCE ON COTTON LAND	STAPLE-MIC.-T.O.%
Feed	Tamcot 788	264	$79.20	$16.50		30 - 2.8 - 15.16
Cotton	Tamcot 788	209	62.70		$27.60	
Feed	Stripper 31	246	73.80	27.60		29 - 2.9 - 15.38
Cotton	Stripper 31	154	46.20		11.10	
Feed	Northern Star R4	248	74.40	28.80		29 - 3.4 - 14.08
Cotton	Northern Star R4	152	45.60		10.50	
Feed	Paymaster 909	204	61.20	2.40		30 - 2.8 - 12.57
Cotton	Paymaster 909	196	58.80		23.70	
Feed	Rilcot St. Cala N	238	71.40	36.30		31 - 2.7 - 15.84
Cotton	Rilcot St. Cala N	117	35.10		Check	
Feed	Rilcot VTI	222	66.60	28.20		29 - 2.7 - 18.81
Cotton	Rilcot VTI	128	38.40		3.30	

COTTON VARIETIES FOR VERTICILLIUM WILT CONTROL

CONDUCTED BY: Sam Hoover, 3 miles west & 2 north of Levelland

PLANTING DATE: May 18

DATE OF IRRIGATIONS: 1 Preplant & August 10

FERTILIZER APPLIED: 14 - 27 - 6

SOIL TYPE: Level sandy clay loam

VARIETY	LINT YIELD	TOTAL LINT VALUE @ 30¢
McNair 1032	195	$58.50
Rilcot 90	157	47.10
Paymaster 111	186	55.80
Paymaster 909	232	69.60

The following block of 909 was in a seperate field which grew side oats grama grass in prior years.

Paymaster 909	405	121.50

IRRIGATED COTTON VARIETIES

CONDUCTED BY: W. E. Carr Jr., 1 mile west of Clauene

PLANTING DATE: May 15

DATE OF IRRIGATIONS: Preplant & August 2

FERTILIZER APPLIED: 70 - 55- 20 CROP HISTORY: Cotton

VARIETY	LINT YIELD	LINT VALUE @ 30¢	PERCENT TURNOUT
Rilcot St. Cala N	405	$121.50	19.1
Rilcot St. Cala S	285	85.50	17.4
Coker 312	460	138.00	19.6

The following plot joined the above but grew sorghum in 1970.

Coker 5110	410	123.00	18.9

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Bill Jackson, 6 miles south & 2 east of OpDyke

PLANTING DATE: May 18

DATE OF IRRIGATIONS: Preplant & July 30

FERTILIZER APPLIED: 80-0-0 sidedressed June 14

SPECIFIED RAINFALL: April - 1.3", May 28 - 1.9", June 3 - .5"

REMARKS: The turnout on Tamcot SP21 was estimated. *Paymaster 111A and Lockett 4789 were ginned together so the average turnout was used on these plots to get yield from seed cotton weights. This could cause error in figuring yields of these three plots. The Tamcot SP21 is a strain from breeding work to develop cold tollerant cotton, but the late planting date may not have provided a situation for this factor to be an advantage.

VARIETY	LINT YIELD	LINT VALUE @ 26¢	PERCENT TURNOUT
Tamcot SP21	390	$101.40	19.5
Anton SP21	282	73.32	15.96
Paymaster 101B	339	88.14	20.77
Paymaster 111A	322	83.72	18.86*
Lockett 4789	242	62.92	18.86*
Stripper Cala N	293	76.18	20.56
Tamcot 788	307	79.82	18.72

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Kent Cooper, 6 miles west & 1 1/2 south of Levelland

PLANTING DATE: May 31

DATE OF IRRIGATIONS: 1 Preplant and July 12

FERTILIZER APPLIED: 30 - 0 - 0

SOIL TYPE: Amarillo Fine Sandy Loam

VARIETIES	LINT YIELD	TOTAL LINT VALUE @ 30¢
Lockett 4789A	244	$73.20
Gregg	197	59.10

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Keith Streety, 3 miles east of Arnett

PLANTING DATE: May 14

DATE OF IRRIGATIONS: Preplant July 21

FERTILIZER APPLIED: 24-30-0

VARIETY	LINT YIELD	LINT VALUE @ 31¢	PRECENT TURNOUT	G - S - M
Paymaster 111	504	$156.24	19.9	53-30-3.0 52-31-3.1
Paymaster 202	496	153.76	21.3	52-31-2.9 53-30-3.0
Rilcot 90	563	174.53	21.5	61-31-3.1 61-30-3.3
Paymaster 101B	518	160.58	22.6	52-30-3.0 52-30-3.0

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Paul Esch, 1 mile north of Levelland

PLANTING DATE: May 20

DATE OF IRRIGATIONS: Preplant plus 1 summer

FERTILIZER APPLIED: 50-40-3

VARIETY	LINT YIELD	TOTAL LINT VALUE @ 30¢
Paymaster 111	260	$78.00
Lankart LX571	240	72.00

DRYLAND COTTON VARIETIES

CONDUCTED BY: Paul Esch, 4 miles north and 2 west of Levelland

PLANTING DATE: June 5

DATE OF IRRIGATIONS: Preplant only

FERTILIZER APPLIED: 50-38-0

VARIETY	LINT YIELD
Paymaster 18	275
Coker 4104	240

DRYLAND COTTON VARIETIES AND SEED QUALITY

CONDUCTED BY: Paul Albus, 1 mile east of Pep

VARIETY AND PLANTING DATE: Columns 1 & 2

REMARKS: Treflan was banded and seeding rate was 14#.

PLANTING DATE	VARIETY	LINT YIELD	AVERAGE SALE PRICE	TOTAL LINT VALUE	AVERAGE G - S - M	LINT PERCENT
June 4	Certified Paymaster 202	276	$32.50	$89.70	52-30-3.07	20.1
June 4	Select Paymaster 202	252	31.25	78.75	53 52-29-2.9	20.9
June 9	Stripper 31	237	31.25	74.06	53-29-3.1	17.5
June 9	Paymaster 111	224	29.58	66.25	54 44-29-2.33	19.7
June 5	Dunn 56C	208	31.25	65.00	52-29.5-2.95	16

IRRIGATED COTTON VARIETIES

CONDUCTED BY: D. L. Price, 3 miles south and 2 west of Pettit

PLANTING DATE: June 11

DATE OF IRRIGATIONS: Preplant and July 18

FERTILIZER APPLIED: 40-40-10

REMARKS: A May planted set of varieties had to be replanted. In the May plots Tamcot SP37, a cold tolerant variety, came up two days earlier than other varieties.

VARIETY	LINT YIELD	TOTAL LINT VALUE @ 30¢	STAPLE UNIFORMITY	2.5% SPAN	50% SPAN	FIBER STRENGTH	MIC.	LINT PERCENT
Rilcot 90	65	$19.56	46	.79	.36	77.5	2.7	9.9
Rilcot St. Cala N	63	19.05	45	.83	.37	82.6	2.7	11.2
Paymaster 202	55	16.50	45	.83	.37	81.3	2.6	9.6
Tamcot 788	81	24.42	45	.84	.38	82.5	2.6	14.5
Paymaster 101A	89	26.94	43	.89	.38	93.4	2.6	13.6
Dunn 56C	119	35.91	46	.81	.37	79.9	2.75	15.7
Stripper 31	86	25.86	45	.85	.38	81.0	2.7	12.3

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Robert Stence, 1/2 mile north of Anton

PLANTING DATE: May 14

DATE OF IRRIGATIONS: Preplant, plus 1 summer

FERTILIZER APPLIED: 60-0-0

CROP HISTORY: Cotton in 1970 with 60-40-0 fertilizer and Grain sorghum in 1969.

REMARKS: The Dunn 56C was a thin stand.

VARIETY	LINT YIELD	LINT VALUE @ 30¢
Dunn 56C	352	$105.60
Tamcot 788	437	131.10
Northern Star R-4	415	124.50
Coker 4104	398	119.40
Lankart 3840	443	132.90

IRRIGATED COTTON VARIETIES

CONDUCTED BY: Lloyd Hood, 6 miles south and 1 east of Whitharral

PLANTING DATE: May 26

DATE OF IRRIGATIONS: Preplant plus 1 summer

FERTILIZER APPLIED: 32-0-0

VARIETY	LINT YIELD	LINT VALUE @ 30¢	PERCENT TURNOUT	MIC.	STAPLE
Rilcot 90	311	$93.30	16.2	3.1	29
Stripper 31	184	55.20	15.5	2.8	29

NEMATODE RESISTANT COTTON VARIETIES

CONDUCTED BY: C. C. Renfro, 7 miles south and 2 west of Levelland

PLANTING DATE: May 14

IRRIGATIONS: Preplant and 1 summer

FERTILIZER APPLIED: 40-40-12 SOIL TYPE: Sandy loam

REMARKS: All of these varieties except Paymaster 111 and Rilcot 90 have some resistance to nematodes, and seemed to help yield on this May 14 planting date. The Westburn 70 may have been more mature than the other resistant varieties.

VARIETY	LINT YIELD	LINT VALUE @ 31¢	PERCENT TURNOUT	G-S-M
Westburn 70	508	$157.48	19.1	52-30.5-3.1
Rilcot 90	349	108.19	21.9	42-30.5-3.35
Lockett BXL	400	124.00	20.4	42-31.5-2.9
McNair 1032B	361	111.91	18.1	42-30.5-3.25
Paymaster 111	327	101.37	19.1	42-31 -2.9

NEMATODE RESISTANT COTTON VARIETIES

CONDUCTED BY: Wayne Palmer, 4 miles south and 3 west of Levelland

PLANTING DATE: June 1

DATE OF IRRIGATIONS: Preplant and 1 summer August 2

FERTILIZER APPLIED: 50-46-0 SOIL TYPE: Sandy loam

REMARKS: Although nematodes are frequently a problem in this field, the late planting date and bed planting prevented nematode damage from causing serious damage this year. McNair 1032B had a thin stand due to poor emergence. All of these varieties except Paymaster 111 have resistance to Nematodes.

VARIETY	LINT YIELD	LINT VALUE @ 31¢	PERCENT TURNOUT	G-S-M
Westburn 70	302	$93.62	20.3	53-29-2.8
Lockett BXL	259	80.29	18.6	53-29-2.9
McNair 1032B	201	62.31	14.6	
Paymaster 18	252	78.12	18.1	53-29-2.7
Paymaster 111	280	86.80	22	53-29-2.75

TIMIK FOR COTTON INSECT & NEMATODE CONTROL

CONDUCTED BY: Prentice Fred, 1 mile south and 1 west of Pettit

PLANTING DATE: Stripper 31 - June 10

DATE OF IRRIGATIONS: Preplant 6" plus 1 summer

REMARKS: The Timik was applied in the seed furrow on a May 14 planting. The June 10 planting was planted back in the same furrow in attempt to save the plots but some of the chemical was probably lost anyway.

TIMIK APPLIED	LINT YIELD	LINT VALUE @ 30¢	PERCENT TURNOUT
10#	219	$65.70	9.94%
5#	250	75.00	10.8
None	237	71.10	10.5

FUMIGATION & COTTON VARIETIES FOR NEMATODE CONTROL

CONDUCTED BY: Charles Macha, 6 miles south & 2 1/2 west of Levelland

DATE OF IRRIGATIONS: Prewater & July 22

FERTILIZER APPLIED: 250 lbs. 16-20-0

SOIL TYPE: Amarillo Fine Sandy Loam

PLANTING DATE	VARIETY	FUMIZONE	LINT YIELD	LINT VALUE @ 30¢
May 22	Stripper 31	.7 gal	355	$106.50
June 8	Stripper 31	None	335	100.50
May 22	McNair 1032B	.7 gal	355	106.50
May 22	McNair 1032B	None	335	100.50

COTTON VARIETY RESISTANCE & SEED QUALITY FOR NEMATODE CONTROL

CONDUCTED BY: Marvin Berry, 5 miles south and 2 east of Levelland

PLANTING DATE: May 25

DATE OF IRRIGATIONS: Preplant plus 1 summer

FERTILIZER APPLIED: 40 - 30

SOIL TYPE & CROP HISTORY: Level loamy sand and grew sorghum the last 3 years.

REMARKS: There was a heavy infestation of Nematodes on this land four years ago, however, growing sorghum the last three years and the late planting date checked the infestation so that there was not a severe stand reduction in any of these varieties this year.

VARIETY	LINT YIELD	LINT VALUE @ 30¢
McNair 1032B	264	$79.20
Lockett BXL	293	87.90
Rilcot VTI	165	49.50
Certified Paymaster 111	265	79.50
Select Paymaster 111	240	72.00

ARMY WORM CONTROL IN COTTON

CONDUCTED BY: Nig Chamberlain, 1 mile north and 1/4 east of Pettit

VAREITY AND PLANTING DATE: Stripper 31 - May 12

DATE OF IRRIGATIONS: Preplant and July 15

FERTILIZER APPLIED: 40-40-0

REMARKS: The insecticide was applied September 10

ARMY WORM CONTROL	LINT YIELD	LINT VALUE @ 30¢	VALUE OF INCREASE	CONTROL COST	RETURN ABOVE COST
Parathion & Toxaphene	444	$133.20	$10.50	$2.75	$7.75
Check	409	122.70			

DRYLAND COTTON ROW SPACING

CONDUCTED BY: Lockett Farms, 14 miles south of Levelland

VARIETY AND PLANTING DATE: Lockett 4789A - June 5

SEEDING RATE PER ACRE	ROW WIDTH	MIDDLE WIDTH	LINT YIELD	TOTAL LINT VALUE
40#	10"	rows	282	$82.62
20#	20"	rows	302	87.97
14#	30"	rows	216	63.30
10#	40"	rows	180	52.60
26#	10"	20"	328	96.47
20#	10"	30"	253	74.04

BROADCAST AND 40" ROW COTTON

CONDUCTED BY: Billy Thetford, 3 1/2 miles north & 2 west of Levelland

PLANTING DATE: Broadcast June 12, 40" row - June 15

IRRIGATIONS: Preplant plus 1 summer by sprinkler

REMARKS: The yields were obtained from a labor of cotton. The 40" row was furrow planted on the west one half of the labor, and the broadcast was drilled flat on the east one half of the labor. These large plots may cause some land variation.

ROW SPACING	LINT YIELD	LINT VALUE @ 30¢	VALUE OF INCREASE
Broadcast 10"	154	$46.20	$18.90
Single row 40"	91	27.30	

DOUBLE AND SINGLE ROW COTTON VARIETIES

CONDUCTED BY: Gene French, 5 miles west & 4 north of Levelland

PLANTING DATE: June 10

DATE OF IRRGATIONS: Preplant only

FERTILIZER APPLIED: 50 - 50 - 12

VARIETY	ROW SPACING	LINT YIELD	DOUBLE ROW YIELD INCREASE	VALUE OF INCREASE @ 30¢	TOTAL LINT VALUE
Dunn 56C	Double Row	257	29#	$ 8.70	$77.10
	40" Row	228			68.40
Lockett 4789A	Double Row	296	105#	31.50	89.40
	40" Row	193			57.90

DOUBLE ROW AND 40" ROW COTTON

CONDUCTED BY: Jerry Biffle, 6 miles south and 2 east of Anton

VARIETY AND PLANTING DATE: Stripper 31 - June 4

DATE OF IRRIGATIONS: Preplant and July 22 and August 4

ROW SPACING	LINT YIELD	LINT VALUE @ 30¢
Double Row	235#	$70.50
40" Rows	222#	66.60

NITROGEN FERTILIZER RATES ON COTTON

CONDUCTED BY: Martin Cuba, 3 miles north of Levelland

VARIETY AND PLANTING DATE: Tamcot 788 - May 21

DATE OF IRRIGATIONS: Preplant & July 22

FERTILIZER APPLIED: June 19 sidedressed

SOIL TYPE: Sandy loam

REMARKS: The difference in the yield of these plots may not be significant.

LBS OF N-P-K	LINT YIELD	LINT VALUE @ 30¢	2.5% SPAN	50% SPAN	MIC.	FIBER STRENGTH	LINT PERCENT
0-0-0	349	$104.70	1.00	.43	2.7	89.9	22.1
50-0-0	309	92.70	1.00	.42	2.7	91.0	20.7
100-0-0	366	109.80	.98	.40	2.65	91.3	22.8

IRRIGATION RATES ON COTTON

CONDUCTED BY: Jerry Biffle, 6 miles south & 2 east of Anton

VARIETY AND PLANTING DATE: Stripper 31 - June 4

DATE OF IRRIGATIONS: Preplant plus dates shown in column 1

REMARKS: The July 22 irrigation was applied about two weeks prebloom.

IRRIGATION DATES	LINT YIELD	LINT VALUE @ 30¢	PERCENT TURNOUT
July 22 August 4	222	$66.60	16.38
August 4	206	61.80	16.80

RATES OF IRRIGATION ON DOUBLE ROW COTTON

CONDUCTED BY: Billy Thetford, 3 miles southeast of Anton

VARIETY AND PLANTING DATE: Paymaster 18 planted May 11

DATE OF IRRIGATIONS: Preplant plus dates in column 1

ROW SPACING: These plots were planted 2 in 1 out, double row, and yields are quoted per acre of allotment.

DATES OF IRRIGATION	LINT YIELD	TOTAL LINT VALUE @ 30¢	VALUE OF IRRIGATION INCREASE
July 16	748	$224.40	
July 16 July 30	788	236.40	$12.40
July 16 July 30 Aug. 13	740	222.00	None

IRRIGATION OF COTTON

CONDUCTED BY: Don Mimms, 1 mile north of Pettit

VARIETY AND PLANTING DATE: Paymaster 18 planted June 8

IRRIGATIONS: Preplant plus 1 summer shown in column 1

FERTILIZER APPLIED: 20-30-0

REMARKS: These plots were planted 2 in 2 out and yields are per acre of allotment. The late 2 in 2 out planting had to many maturity problems to benefit from irrigation.

IRRIGATION	LINT YIELD	LINT VALUE @ 25¢
None	375#	$116.25
Aug. 8	183#	56.73

IRRIGATION RATES AND TIMES OF APPLICATION ON COTTON

CONDUCTED BY: Martin Cuba, 3 miles north of Levelland

VARIETY AND PLANTING DATE: Tamcot 788 - May 21

DATE OF IRRGATIONS: Preplant plus dates shown in column 1

FERTILIZER APPLIED: 50-0-0 June 19

REMARKS: Irrigation rate is estimated to apply three inches per irrigation. The warm dry spring probably contributed most to the yield increase from the prebloom irrigation.

IRRIGATION DATES	LINT YIELD	LINT VALUE @ 30¢	VALUE OF IRRIG. INCREASE	LBS. LINT PER INCH OF IRRIG.	2.5% SPAN	50% SPAN	MIC	FIBER STRENGTH	LINT PERCENT
July 6-Prebloom	361	$108.30	$32.10	36#	.99	.40	2.6	90.3	21.1
July 20-1st bloom	320	96.00	19.80	22#	.99	.41	2.65	92.9	22.1
July 6-Prebloom July 20-1st bloom	436	130.80	54.60	30#	.97	.41	2.55	89.0	21.6
None	254	76.20			.95	.39	2.7	93.2	23.1

SEEDING RATES ON COTTON

CONDUCTED BY: Sam Jackson, 5 miles south & 1 west of OpDyke

VARIETY AND PLANTING DATE: Rilcot 90 planted May 31

DATE OF IRRIGATIONS: Preplant and August 1

FERTILIZER APPLIED: 50 - 0 - 0

SEEDING RATE	STALKS PER FT. OF ROW	LINT YEILD	LINT VALUE @ 30¢	PERCENT TURNOUT
18#	4	405	$121.50	18.26%
36#	8	383	114.90	18.74%

RATES OF TREFLAN APPLICATION ON COTTON

CONDUCTED BY: Martin Cuba, 3 miles north of Levelland

VARIETY AND PLANTING DATE: Tamcot 788-16 May 25

DATE OF IRRIGATIONS: Preplant plus 1 summer

FERTILIZER APPLIED: 50 - 0 - 0 June 19

REMARKS: Treflan was applied at planting time 3/4" subsurface and mixed with rotary hoes. Weed counts indicated no significant difference in carless weeds on the different rates. The rates were applied on a 20" band. It should be understood that the lower rates of application would probably not be as effective with deeper incorporation depths. There were 10 replications in each plot.

BROADCAST TREFLON RATE	LINT YIELD	HERBICIDE COST PER ACRE
1 Pt.	259	$1.32
3/4 Pt.	264	1.00
1/3 Pt.	268	.44

GRAIN SORGHUM SUMMARY OF RESULTS

PLANTING DATES AND MARUTITY SELECTION

Many of the grain sorghum demonstrations conducted the past few years have been designed to help farmers find the best combination of planting dates, variety maturity, and irrigation level for his set of conditions. The following three combinations have stood out as good producers.

1. Full season hybrid planted between April 15 and May 5.
2. Medium late hybrid planted between May 5 and May 20.
3. Medium early hybrids planted between May 20 and June 10.

The above three combinations are listed in order of preference for high yield levels. Low yield levels with dry land and short irrigation supplies have not received quite as much benefit form the full season hybrid and April planting dates as have high yield situations.

Conditions have not been real good for obtaining a stand of sorghum in April the last 2 or 3 years, and some hybrids are reacting better to cooler temperatures associated with early planting than others.

INSECT CONTROL

Greenbugs again appeared in sorghum this year, but were generally eliminated by beneficials near the first week in August. The first two lower leaves of the sorghum usually die and greenbug populations that do not kill more than the next two leaves have not made much profit from insecticide applications. We need more result demonstrations on greenbug control. It is also possible that spraying of large acreages in the community can create problems with other insects in cotton and sorghum by building insect resistance to insecticides and destruction of beneficial insects.

SORGHUM DISEASE

Sorghum disease has increased in recent years. Some varieties have resistance to MDMV. More resistance to stalk rots is needed and sought by breeders.

3 MATURITIES OF SORGHUM UNDER 2 PLANTING DATES

CONDUCTED BY: Gordon Crouch, 2 miles south and 4 west of Whitharral

VARIETY AND PLANTING DATE: Shown in columns 1 & 2

DATE OF IRRIGATIONS: Preplant, June 26, July 9, & July 18

FERTILIZER APPLIED: 80-0-0 Preplant

REMARKS: The later planting was able to gain yield from August rains. The August rains did not benefit the April planting. Even so the late hybrid on the early planting had almost top yield under these adverse conditions. The important observation to note is that the late hybrid was much better on the April planting and the medium maturing hybrid best on the mid-May planting. This pattern of response has been fairly consistent in previous years results. The PAG-430 would have probably done better on a June planting.

PLANTING DATE	VARIETY	VARIETY MATURITY	YIELD	VARIETY INCREASE	PLANTING DATE INCREASE	TOTAL GRAIN VALUE AT 1.85
	PAG665	Late	6256	2222	221	$115.73
April 30	PAG515	Med.	5818	1784		107.63
	PAG430	Med. Early	4034			74.62
	PAG665	Late	6035	1228		111.64
May 23	PAG515	Med.	6450	1643	632	119.32
	PAG430	Med. Early	4807		773	88.29

DRYLAND SORGHUM VARIETIES AND PLANTING DATES

CONDUCTED BY: Martin Cuba, 3 miles north of Levelland

VARIETY AND PLANTING DATE: Shown in columns 1 & 2

PLANTING DATE	VARIETY	YIELD
May 31	R10	432
June 9	R10	382
June 9	RS671	271

DRYLAND SORGHUM VARIETIES

CONDUCTED BY: D. W. Stephenson, 1 1/2 miles east & 2 south of Whitharral

PLANTING DATE: June 12

VARIETY	MATURITY	YIELD
RS608	Med. Early	1635
Horizon 64	Med. Early	1550
PAG515	Medium	1470

DOUBLE ROW IRRIGATED SORGHUM VARIETIES

CONDUCTED BY: Bobby Jackson, 5 miles south and 2 west of Levelland

VARIETY AND PLANTING DATE: May 5

DATE OF IRRIGATIONS: Preplant, June 25, & July 8

FERTILIZER APPLIED: 182-40-0

REMARKS: All of these hybrids are full season hybrids.

VARIETY	YIELD
F65	7880
Jumbo L	7275
NK280	6156
F65A	6000

The following 2 varieties were located in another field.

F65A	6866
NK280	6360

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DOUBLE ROW SORGHUM VARIETIES

CONDUCTED BY: Bobby Jackson, 5 miles south and 1 east of Levelland

PLANTING DATE: May 5

DATE OF IRRIGATIONS: Preplant, June 25, & July 4

FERTILIZER APPLIED: 150-0-0

REMARKS: All of these hybrids are full season hybrids.

VARIETY	YIELD
NK280	7905
F65A	7730
P820	7600

IRRIGATED SORGHUM VARIETIES

CONDUCTED BY: Ed Reynolds, 1 mile north & 2 east of Pettit

PLANTING DATE: April 25

DATE OF IRRIGATIONS: 1 Preplant & 3 summer

FERTILIZER APPLIED: 50 - 0 - 0

REMARKS: Hail damage August 3rd. probably reduced yields 1000# per acre. Yields were determined by combine bin estimates.

VARIETY	MATURITY	YIELD
Jumbo L	Late	4830
Raider C	Med.	3955
Little Joe A	Med.	3330

The following 2 varieties were in a different field, planted May 15, and recieved 2 summer irrigations.

Excel 733		3733
Raider C		3266

GREENBUG CONTROL IN SORGHUM

CONDUCTED BY: Bobby Jackson, 5 miles south & 2 west of Levelland

VARIETY AND PLANTING DATE: F65A - May 5

DATE OF IRRIGATIONS: Preplant, June 25, July 8

FERTILIZER APPLIED: 182 - 40 - 0

REMARKS: The higher yields of the untreated plot, is difficult to explain. The yield difference may be due to land variation. It could also be partly due to the untreated plot maturity being delayed slightly, allowing this plot to benefit more from the later rains. It does seem definate that the insecticide application did not improve yield. Research indicates that greenbug numbers on headed sorghum below 1200 per plant do not reduce yield. This is about enough greenbugs to cover the first 2 lower leaves, not counting the first 2 lower leaves which usually die anyway. Greenbug numbers in this field probably ranged around 800 per plant. It was interesting to note that kill of greenbugs was evident 10 rows into the check plot which was upwind at time of application. These rows were not included in check plot yields.

GREENBUG TREATMENT	YIELD
1/2 Pt. Di-Syston	6000
None	6900

FUMINGATION FOR NEMATODE CONTROL IN SORGHUM

CONDUCTED BY: R. E. Bullin, 3 miles east & 3 south of Clauene, in cooperation with South Plains Research and Extension Center.

VARIETY AND PLANTING DATE: Rico planted May 11, 1971

DATE OF IRRIGATIONS: Preplant plus 1 summer

FUMIGANT APPLIED: May 7, 1971 with 1 knife under each row 12" deep

REMARKS: There appeared to be visible difference in growth of plants early in the season, however, as the season progressed, the difference disappeared. The season in this area was most favorable for sorghum with abundant rain. Plots were harvested by hand. Two samples were collected from each replication (1/1000 A equals 13.5' of row). The heads were weighed and grain weight was calculated as 70% of total head weight. All treatments increased grain yield over the untreated check, however, the differences were not statistically significant in this test. The size of heads was larger in all treatments as shown by grams per head and fewer heads to make a pound. The stand as indicated by the number of heads per plot was about the same in all plots except DBCP 1/2 gal which was slightly higher. If fumigant applications are made on sorghum, labels should be followed closely as some fumigants are not cleared for use on sorghum.

FUMIGANT & RATE	HEADS PER PLOT	GM. PER HEAD	HEADS PER LB.	YIELD #/A	VALUE OF INCREASE @ 1.85	FUMIGANT COST	RETURN ABOVE COST
DBCP ½ gal	60.17	76.08	5.97	7058	512#=$9.47	1.70	$7.77
Telone 8 gal	57.50	78.8	5.76	6991	445#= 8.23	5.75	2.48
DPCP 1 gal	57.61	78.48	5.78	6972	426#= 7.88	3.40	4.48
Check	58.65	72.39	6.27	6546			

FERTILIZER RATES ON GRAIN SORGHUM

CONDUCTED BY: Wayne Palmer, 2 miles west and 4 south of Levelland

VARIETY AND PLANTING DATE: Pioneer 820, May 3

DATE OF IRRIGATIONS: Preplant, irrigated to stand May 10, July 3, & July 18

CROP HISTORY: Sorghum 1969, cotton and 60-60-10 in 1970

SOIL TYPE: Sandy Loam

REMARKS: Plots 3 and 6 some yield difference due to land variation. There may not be a definate response to Phosphorus in these plots.

LBS. OF N-P-K	YIELD	YIELD INCREASE	VALUE OF INCREASE AT $1.85	FERT. COST	RETURN ABOVE COST
84-46-0	4880	885#	$16.37	$8.80	$7.57
168-92-0	5698	1703#	31.50	17.60	13.90
132-0-0	5312	1315#	24.32	6.60	17.72
66-0-0	4630	635#	11.74	3.30	8.44
0-0-0	3995				
132-0-0	5720	1725#	31.91	6.60	25.31
150-46-0	5085	1090#	20.16	12.10	8.06

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PHOSPHORUS ON SORGHUM

CONDUCTED BY: Paul Esch, 1 mile north of Levelland

VARIETY AND PLANTING DATE: F65 - May 23

DATE OF IRRIGATIONS: Preplant, July 10, & July 28

LBS OF N-P-K	YIELD
120-30-0	3600
80-0-0	3600

FERTILIZER RATES ON SORGHUM

CONDUCTED BY: W. E. Carr Jr., 1 mile west of Clauene

VARIETY AND PLANTING DATE: PAG 515 - May 13

DATE OF IRRIGATIONS: Preplant, July 8 & July 20

CROP HISTORY: Sorghum 3 years

SOIL TYPE: Sandy Clay Loam

REMARKS: These plots indicate about 400# of additional yield from 40# of Phosphorus.

LBS OF N-P-K	YIELD	YIELD INCREASE OVER PLOT 1	VALUE OF INCREASE at $1.85	ADDED FERT. COST	RETURN ABOVE COST
50-0-0	3684				
150-40-0	4135	451	$8.34	9.00	Lost $.66
110-40-0	4424	740	13.69	7.00	6.69
150-0-0	3612	Less 72#	Less 1.33	5.00	Lost 6.33

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FERTILIZER RATES, PLANTING DATES, & VARIETIES OF SORGHUM

CONDUCTED BY: George Whittenburg, 2 miles west and 1 north of Levelland

VARIETY AND PLANTING DATE: Shown in columns 2 & 3

SOIL TYPE: Sandy Clay Loam

REMARKS: Close comparisons on one variable are difficult to make but with 4 variables involved, it appears that the 120-0-0 was very profitable and that the later hybrid, F65, on the earlier planting date showed a good increase.

LBS OF N-P-K	PLANTING DATE	VARIETY	NO. OF IRRIG.	YIELD
0-0-0	June 8	E57A	2	2980
120-0-0	June 8	E57A	2	5700
120-0-0	June 1	E57A	2	5700
200-0-0	May 23	E57A	3	6800
200-0-0	May 15	F65	3	7400

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